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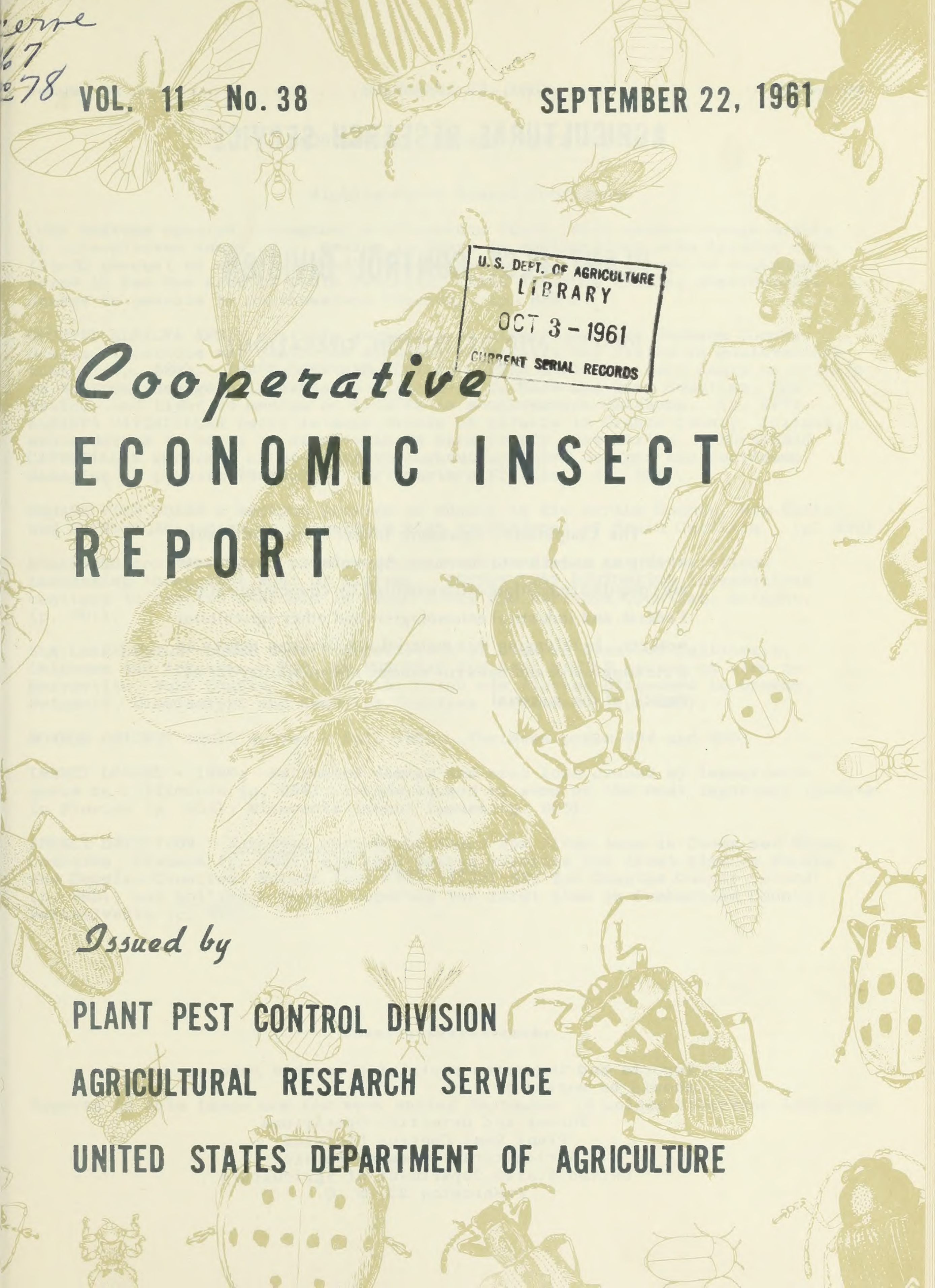

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Cooperative
ECONOMIC INSECT REPORT

Issued by

PLANT PEST CONTROL DIVISION
AGRICULTURAL RESEARCH SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

Reports and inquiries pertaining to this release should be mailed to:

Survey and Detection Operations
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Washington 25, D. C.

Volume 11 September 22, 1961 Number 38

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

CORN EARWORM spotted throughout southwestern Idaho, with severe damage mostly to late-planted sweet corn; medium to heavy in southeastern area Arizona corn (25-50 percent of ears infested); and marked increase of damage to soybeans noted in Pee Dee area of South Carolina. FALL ARMYWORM causing considerable damage to peanuts in northwestern Florida. (p. 885).

SPOTTED ALFALFA APHID controls necessary on alfalfa in most Jackson County, Oregon, locations and continues abundant in alfalfa hay fields in southwestern Idaho. (p. 886). THREE-CORNERED ALFALFA HOPPER continues very heavy on alfalfa in Arizona; damage noticeable to alfalfa in De Baca and Quay Counties, New Mexico; and light to medium on alfalfa in southwestern Oklahoma. (p. 887). ALFALFA CATERPILLAR heavy in some fields of alfalfa in Graham County, Arizona, and moderate to heavy in alfalfa in De Baca County, New Mexico. VELVETBEAN CATERPILLAR moderate on soybeans throughout southern Georgia and continues damaging to peanuts throughout northwestern Florida. (p. 888).

SQUASH VINE BORER a serious problem on squash in Rio Arriba County, New Mexico, and PICKLEWORM damage to cantaloups high in Piedmont of South Carolina. (p. 890).

BOLLWORMS continue heavy in many Arizona cotton fields and infestations increasing throughout most of Alabama. COTTON LEAF PERFORATOR infestations continue to require controls in Yuma, Pinal and Maricopa Counties, Arizona. (p. 891).

ELM LEAF BEETLE caused severe defoliation of elms in areas of California, Oklahoma and Arkansas. SMALLER EUROPEAN ELM BARK BEETLE medium on elms in Marysville, Yuba County, California; Dutch elm disease diagnosed in Greene, Poinsett, Mississippi and Randolph Counties, Arkansas. (p. 892).

MORMON CRICKET adult survey - fall 1961. (between pages 894 and 895).

INSECT LOSSES - 1960: Estimated damage and crop loss caused by insect/mite pests in California (p. 898); losses caused by some of the most important insects in Florida (p. 904); Minnesota insect losses (p. 905).

INSECT DETECTION: European corn borer found for first time in Coosa and Macon Counties, Alabama (p. 885); elm leaf beetle recorded for first time in Eureka and Douglas Counties, Nevada (see CEIR 11(35):830 for Douglas County record) (p. 892); and hollyhock weevil reported for first time in Cumberland County, Pennsylvania (p. 893).

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Reports in this issue are for week ending September 15 unless otherwise indicated.

WEATHER BUREAU 30-DAY OUTLOOK

MID-SEPTEMBER TO MID-OCTOBER 1961

The Weather Bureau's 30-day outlook for mid-September to mid-October calls for temperatures to average below seasonal normals over most of the Nation except for above normal over the Northeast, and near normal in the Middle Atlantic States, the West Coast States, and Florida. The Central Plains are expected to be the area of most unseasonable coolness. Precipitation is expected to exceed normal along the West Coast and Atlantic Seaboard. Subnormal rainfall is indicated for the Northern Plains and for the lower Ohio Valley and Tennessee. In the remainder of the Nation about normal amounts are in prospect.

Weather forecast given here is based on the official 30-day "Resume and Outlook", published twice a month by the Weather Bureau. You can subscribe through superintendent of Documents, Washington 25, D. C. Price $4.80 a year, $2.40 a half year.

WEATHER OF THE WEEK ENDING SEPTEMBER 18

This week's weather was featured by hurricane Carla and beneficial rains in the northern Great Plains early in the week, an unusual temperature change east of the Rockies about midweek, and hurricane Esther's threat to the Atlantic coast as the period ended. Hurricane Carla and a cold front moving southward from Canada were responsible for most of the week's rainfall which was very heavy in much of the midcontinent area and extreme Northeast. Carla moved from Texas to the Great Lakes on the 11th to 14th, leaving 10 to 16 inches of rain along the first 50 miles of her path into Texas and over 5 inches from Texas to Michigan. Carla was blamed for 43 deaths and hundreds of millions of dollars damage, and heavy rains caused widespread flooding along her path. The cold front rains during the first 3 days in the northern Great Plains totaled over 2 inches in much of the Dakotas and parts of eastern Montana. The rains provided much-needed moisture, especially in eastern Montana. After Carla's passage the cold front moved into the southern Great Plains and was responsible for 7 to 11 inches of rain in the lower Rio Grande Valley of Texas on the 13th and 14th and light to moderate rainfall in the eastern part of the country on the 14th and 15th. West of the Continental Divide showers, mostly light, occurred near the end of the period.

With the passage of the cold front about midweek, temperatures dropped 20° to 30° and relative humidity about 20 percent, thus, abruptly ending the period of hot, humid weather that had persisted for 3 weeks in many areas east of the Rockies. Minima fell below freezing at many northern stations and to the lowest level on record for early September at some stations in the central portion of the country. Ardmore, South Dakota, reported 18°; Sibley and Oelwein, Iowa, 32°; and Norfolk, Connecticut, 25°. Frost occurred over all of Nebraska with temperatures as low as 22°, and in some sections of Kansas with a low of 30° at Atwood. Temperatures for the week averaged 6° to 12° below normal between the Mississippi River and the Rockies, and generally within 3° of normal elsewhere.

At the end of the period the large and dangerous hurricane Esther was moving toward the Atlantic coast. On Tuesday morning, September 19, hurricane warnings were displayed from Cherry Point, North Carolina, to the Virginia Capes. (Summary supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

GRASSHOPPERS - NEW MEXICO - Populations threatening or above on total of 790,000 acres of rangeland, mostly in eastern portion of State. Surveys conducted during summer indicate considerable reduction in grasshopper populations on Conservation Reserve land in eastern part of State. (N. M. Coop. Rpt.) NEBRASKA - Adult survey completed. Populations light to spotted in most areas of State on cropland and rangeland. Damage heaviest in northeast area. Dominant rangeland species are *Ageneotettix deorum* and *Aulocara elliotti*. *Melanoplus femurrubrum* rapidly increasing on cropland; other dominant cropland species include *M. bivittatus*, *M. bilituratus* and *M. differentialis*. One field in northeast contained high population of *Phoetaliotes nebrascensis*. (Bell). SOUTH DAKOTA - Infestation heavier and more extensive than in 1960, with most of infestation in north central and northwest parts of State. Large areas of infested rangeland exist in some north central, northwestern and western counties. Total rangeland acreage with threatening or higher populations, approximately 275,000 acres; approximately 1,250,000 acres with light populations. Counties with areas of lightly infested rangeland are Harding, Butte, Custer, Pennington, Meade, Haakon, Ziebach, Dewey, Potter and Sully. (Burge). WISCONSIN - Adult survey completed. Results presently indicate an overall increase in populations. (Wis. Ins. Sur., Sept. 8). Mating of *M. femurrubrum* and *M. differentialis* about finished in most southern areas of State; females observed filled with eggs and egg laying expected to begin shortly. (Wis. Ins. Sur.). INDIANA - Some alfalfa badly stripped by feeding of *Melanoplus* spp. (Wilson).

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - ALABAMA - Found for first time in Coosa and Macon Counties on corn. (Buttram). WISCONSIN - Moths still in flight and larval infestations generally light. (Wis. Ins. Sur., Sept. 8).

CORN EARWORM (*Heliothis zea*) - OREGON - Moths appearing in light traps in western portion of State later than normal; first moths collected at Harbor and Eugene on September 3, and in Salem, September 13. (Larson). IDAHO - Spotted throughout southwestern area, with severe damage mostly on late-planted (mid-June) sweet corn. Damage to earlier planted corn considerably less. (Bechtolt). WYOMING - Light in corn in Platte and Goshen Counties; averaged 2 per 100 plants. (Fullerton). ARIZONA - Medium to heavy in southeast area corn; 25-50 percent of ears infested. (Ariz. Coop. Sur.). WISCONSIN - Populations remain relatively constant. Generally, eggs scarce in most areas. Some problems exist in some southern areas, however. (Wis. Ins. Sur., Sept. 8). ARKANSAS - Averaged 2, 9 and 0 per 3 feet of row in 3 fields of soybeans checked in Franklin County. (Ark. Ins. Sur.). SOUTH CAROLINA - Marked increase in damage to soybeans in Pee Dee area north of Santee Lakes; leaves and pods being damaged. (Nettles et al.). VIRGINIA - Very light locally on soybeans in Northumberland County; no control necessary. (Saville, Sept. 7).

FALL ARMYWORM (*Laphygma frugiperda*) - OKLAHOMA - Light to heavy in southwest; appreciable damage present in areas of Cotton County. (Okla. Coop. Sur.). ARKANSAS - Counts in 3 fields of soybeans surveyed in Franklin County averaged 0, 2 and 0 per 3 feet of row, respectively. (Ark. Ins. Sur.). ALABAMA - Causing extensive damage to millets and sorghums in several fields in Mobile County. (Seibels). FLORIDA - Causing considerable damage to peanuts in northwest. (Fla. Coop. Sur.). VIRGINIA - Locally severe in 6-acre field of alfalfa near Fincastle, Botetourt County. (Tarpley, Brown).

SOUTHWESTERN CORN BORER (*Zeadiatraea grandiosella*) - ARIZONA - Medium in central area sorghum and corn with 20-40 percent of stalks infested in some fields. (Ariz. Coop. Sur.).

SORGHUM WEBWORM (*Celama sorghiella*) - OKLAHOMA - Populations apparently increased in untreated, immature grain sorghum in south central area, September 10-16; averaged 10 per head at beginning of period and 15 per head later in period. (Okla. Coop. Sur.). TEXAS - Larvae averaged 120 per 10 heads in Leon County. (Randolph).

SORGHUM MIDGE (*Contarinia sorghicola*) - TEXAS - Considerable damage becoming evident in Lubbock area, Lubbock County. (Texas Coop. Rpt.).

CORN ROOTWORMS (*Diabrotica* spp.) - WYOMING - *D. virgifera* adults per 100 plants in corn averaged 2-3 in Goshen County and 5-10 in Platte County; caused considerable damage to ears in some areas of Platte County. (Fullerton). SOUTH DAKOTA - Populations low in northern portion of east central area. In fields checked, only 4 adults of *D. longicornis* and *D. undecimpunctata howardi* found per 100 plants. Also low in alfalfa adjacent to corn with less than one adult per 10 sweeps. (Hanten).

CORN LEAF APHID (*Rhopalosiphum maidis*) - WYOMING - Decreasing in corn in Platte and Goshen Counties. (Fullerton). SOUTH DAKOTA - Low in Deuel County; 10 percent of corn plants infested. (Hanten).

GREENBUG (*Toxoptera graminum*) - TEXAS - Found during summer on western wheatgrass and recently light numbers reported on large clumps of volunteer wheat in high plains area. (Daniels).

RICE STINK BUG (*Oebalus pugnax*) - ALABAMA - Heavily damaged late corn in Mobile County. (Seibels).

HESSIAN FLY (*Phytophaga destructor*) - NEBRASKA - Heavy parasitism of immature forms indicated in central area of State. (Bergman).

TWO-SPOTTED SPIDER MITE (*Tetranychus telarius*) - WYOMING - Heavy, scattered populations in some fields of corn throughout Platte and Goshen Counties; some areas only lightly infested. (Fullerton). COLORADO - Trace numbers present on lower leaves of corn in Prowers, Bent, Otero, Crowley, Larimer, Weld, Adams, Mesa, Delta, Montrose and Garfield Counties; damage very light. No further damage expected. (Bulla, Schweissing, Jenkins).

A SOD WEBWORM (*Crambus sperryellus*) - CALIFORNIA - Heavy infestation in grass in Hemet area, Riverside County. (Cal. Coop. Rpt.).

A LEAF BEETLE (*Monoxia* sp.) - NEVADA - Heavy on fourwing saltbush (*Atriplex canescens*) with plants completely defoliated east of Sparks, Washoe County. (Bechtel, Parker).

A SPITTLEBUG (*Tomaspis bicincta*) - GEORGIA - Heavy on Coastal Bermuda grass in Tift County. (Beck).

A THRIPS (*Chirothrips texanus*) - OKLAHOMA - Populations increased on experimental plots of sideoats grama in central area; averaged one per 6-inch head. (Okla. Coop. Sur.).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - OREGON - Distribution general in Jackson County alfalfa; controls necessary in most localities. Averaged 5 per sweep in several fields sampled September 12-13, with winged forms predominanting. (Capizzi). IDAHO - Continues abundant in alfalfa hay fields in southwest area. Approximately 5,000-10,000 acres heavily infested and showing severe injury in Canyon County, with greatest populations and heaviest damage in northeast section of county. (Bechtolt). COLORADO - Light to moderate in most areas; counts per 100 sweeps averaged 20-30 in Montrose County and 500-2,000 in Bent, Otero, Crowley and Pueblo Counties. (Bulla, Schweissing). OKLAHOMA - Continued light (6 per sweep) in alfalfa checked in southwest. (Okla. Coop. Sur.). INDIANA - Remains light in Ohio River Valley; no significant buildup during past 3 weeks. (Wilson).

PEA APHID (*Macrosiphum pisi*) - OREGON - Averaged 2 per sweep in several fields of alfalfa sampled in Jackson County, September 12-13. (Capizzi).
WYOMING - Increasing in alfalfa in Platte and Goshen Counties;

averaged 110 per 100 sweeps. (Fullerton). SOUTH DAKOTA - Low on alfalfa in east central area; averaged 2.7 per 10 sweeps. (Hanten). NEW MEXICO - Generally light in alfalfa throughout State. (N. M. Coop. Rpt.). MARYLAND - Light on alfalfa in Howard and Queen Annes Counties. (U. Md., Ent. Dept.). DELAWARE - Increased in alfalfa statewide with 2-3 per sweep; averaged 30 per sweep in one Kent County field. (Burbutis, Mason).

TARNISHED PLANT BUG (*Lygus lineolaris*) - MARYLAND - Adults continue common in alfalfa in Queen Annes County. (U. Md., Ent. Dept.). DELAWARE - Counts generally below one per sweep in alfalfa and soybeans throughout State. (Burbutis, Mason).

RAPID PLANT BUG (*Adelphocoris rapidus*) - MARYLAND - Averaged one per sweep in Queen Annes County. (U. Md., Ent. Dept.). DELAWARE - Adults and nymphs decreased in alfalfa and soybeans; highest count one per sweep in New Castle County alfalfa. (Burbutis, Mason).

PLANT BUGS - SOUTH DAKOTA - *Lygus* spp. and *Adelphocoris* spp. light on alfalfa in east central area. *Lygus* spp. averaged 4.7 and *A. lineolatus* 3.3 per 10 sweeps. (Hanten).

MEADOW SPITTLEBUG (*Philaenus spumarius*) - MARYLAND - Adults averaged 2 per sweep on alfalfa in Queen Annes County. (U. Md., Ent. Dept.).

BROWN STINK BUG (*Euschistus servus*) - ARKANSAS - Counts averaged 9, 4 and 2 per 3 feet of row in 3 fields of soybeans surveyed in Franklin County. (Ark. Ins. Sur.).

THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) - ARIZONA - Continues very heavy in alfalfa statewide; averaged 200-1,000 per 100 sweeps. (Ariz. Coop. Sur.). NEW MEXICO - Adults averaged 6 per 10 sweeps in alfalfa in De Baca County and 6-7 in Quay County. Damage noticeable. (N. M. Coop. Rpt.). OKLAHOMA - Averaged 8-14 per 10 sweeps (light to medium) in alfalfa in southwest part of State. (Okla. Coop. Sur.). ARKANSAS - In 3 fields of soybeans surveyed in Franklin County, counts averaged 6, 22 and 4 per 3 feet of row, respectively. (Ark. Ins. Sur.).

POTATO LEAFHOPPER (*Empoasca fabae*) - PENNSYLVANIA - Control good on alfalfa. (Pepper). MARYLAND - Adults and nymphs moderate on alfalfa in Howard and Queen Annes Counties. (U. Md., Ent. Dept.). DELAWARE - Adults and nymphs averaged one per sweep on soybeans and alfalfa in New Castle County and 50 per 100 sweeps in Kent and Sussex Counties. (Burbutis, Mason).

CLOVER LEAFHOPPER (*Aceratagallia sanguinolenta*) - SOUTH DAKOTA - Averaged 12.2 per 10 sweeps in east central area alfalfa. (Hanten).

GARDEN FLEAHOPPER (*Halticus bracteatus*) - DELAWARE - Adults and nymphs continue to increase on soybeans over State; highest counts in New Castle and Kent Counties, with over 10 per sweep in several fields. (Burbutis, Mason).

BLACK BLISTER BEETLE (*Epicauta pennsylvanica*) - DELAWARE - Adults averaged 80 per 100 sweeps on alfalfa in area of Kent County. (Burbutis, Mason). PENNSYLVANIA - Feeding on blossoms of alfalfa in Franklin County. (Pepper).

ALFALFA WEEVIL (*Hypera postica*) - WYOMING - Adults averaged 14 and larvae 20 per 100 sweeps in alfalfa in Platte and Goshen Counties. (Fullerton). COLORADO - Adults found in all fields checked in Otero, Bent, Crowley and Pueblo Counties. These adults will overwinter and provide basis for damaging infestations in spring of 1962. (Schweissing). MARYLAND - Adults averaged 7 per 100 sweeps on alfalfa in Queen Annes County. (U. Md., Ent. Dept.).

MEXICAN BEAN BEETLE (*Epilachna varivestis*) - VIRGINIA - Damaging soybeans in several localities in eastern part of State. Locally severe around Toano, James City County; large fields affected, with some areas in fields without leaves.

(Tarpley et al.). GEORGIA - Light to moderate on soybeans throughout southern area. (Johnson). ALABAMA - Caused light to moderate damage to soybeans in several fields in vicinity of Orchard community, Mobile County. (Seibels).

BEAN LEAF BEETLE (Cerotoma trifurcata) - ALABAMA - Damage ranged light to medium in some soybean fields in vicinity of Orchard community, Mobile County. (Seibels). VIRGINIA - Severe locally on soybeans at Tappahannock, Essex County, (Little, Sept. 9). DELAWARE - Adults increased on soybeans in all areas, with one per sweep in New Castle County, 85 per 100 sweeps in Kent County and 30 per 100 sweeps in Sussex County. (Burbutis, Mason).

CUCUMBER BEETLES (Diabrotica spp.) - ALABAMA - D. balteata and D. undecimpunctata howardi caused light to moderate damage in several fields of soybeans in vicinity of Orchard community, Mobile County. (Seibels).

ALFALFA CATERPILLAR (Colias eurytheme) - ARIZONA - Heavy in some alfalfa in Graham County; 50-1,100 larvae per 100 sweeps; considerable damage in these fields. Much lighter and declining in other areas. (Ariz. Coop. Sur.). NEW MEXICO - Moderate to heavy infestations damaging alfalfa in De Baca County. Generally light in southern counties. (N. M. Coop. Rpt.). COLORADO - Populations vary 40-150 per 100 sweeps in Otero, Crowley and Bent Counties. (Schweissing). OKLAHOMA - Light, 2-5 per sweep, in alfalfa checked in southwest. (Okla. Coop. Sur.). SOUTH DAKOTA - Immature forms averaged 4.2 per 10 sweeps on alfalfa in east central area. (Hanten). DELAWARE - Larvae present in alfalfa statewide; averaged 30 per 100 sweeps in Sussex County. (Burbutis, Mason).

GREEN CLOVERWORM (Plathypena scabra) - DELAWARE - Young larvae increasing on soybeans and alfalfa in Kent and Sussex Counties, particularly in Kent County, with counts as high as 150 per 100 sweeps on soybeans. (Burbutis, Mason). ARKANSAS - Counts in 3 fields of soybeans surveyed in Franklin County averaged 0, 210 and 27 per 3 feet of row, respectively. (Ark. Ins. Sur.).

VELVETBEAN CATERPILLAR (Anticarsia gemmatalis) - GEORGIA - Moderate on soybeans throughout southern portion of State. (Tippins, Johnson). FLORIDA - Continues damaging to peanuts throughout all of northwest part of State. (Fla. Coop. Sur.).

CABBAGE LOOPER (Trichoplusia ni) - GEORGIA - Light to moderate on soybeans in southern part of State. (Johnson). ARKANSAS - Averaged 2, 9 and 0 per 3 feet of row in 3 fields of soybeans surveyed in Franklin County. (Ark. Ins. Sur.). DELAWARE - Larvae present on alfalfa in New Castle and Kent Counties and averaged 60 per 100 sweeps on same crop in Sussex County. (Burbutis, Mason).

BEET ARMYWORM (Loxostege sticticalis) - CALIFORNIA - Currently heavy on alfalfa on San Joaquin, Fresno County, and medium in Lancaster, Los Angeles County. (Cal. Coop. Rpt.).

YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli) - OKLAHOMA - Light (4 per 10 sweeps) in alfalfa checked in southwest area. (Okla. Coop. Sur.).

A PYRAUSTID (Nomophila noctuella) - VIRGINIA - Cutting off leaves and stems of new alfalfa seedlings in field at Rocky Mount, Franklin County. Infestations spotted over field but spreading. (Tarpley, Welch).

FRUIT INSECTS

CODLING MOTH (Carpocapsa pomonella) - COLORADO - Injury appeared in pear orchards in Mesa County. (Bulla). OHIO - Infestations very light as of September 15. (Cutright).

APPLE MAGGOT (Rhagoletis pomonella) - OHIO - No flies trapped since September 8; severe damage to dooryard apples and plums. (Cutright).

EUROPEAN RED MITE (Panonychus ulmi) - OHIO - Infestations declined. (Cutright). DELAWARE - Active throughout State on apples. (Burbutis, Mason).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - OHIO - Common in orchards but with little damage. (Cutright). COLORADO - Light populations on apple foliage; ranged 1-10 per leaf. (Bulla).

PEACH TWIG BORER (Anarsia lineatella) - COLORADO - Most damaging insect of peaches in Mesa County; caused an estimated loss of 2-25 percent with higher ranges locally. (Bulla).

A PYRALID (Acrobasis caryivorella) - NEW MEXICO - Appeared on terminals of pecan trees in Carlsbad area, Eddy County. (N. M. Coop. Rpt.).

A BOSTRICHID (Amphicerus cornutus) - CALIFORNIA - Locally heavy on walnuts in Fresno, Fresno County. (Cal. Coop. Rpt.).

PECAN WEEVIL (Curculio caryae) - OKLAHOMA - Infestations reported from east, south central and central areas. (Okla. Coop. Sur.).

WALNUT HUSK FLY (Rhagoletis completa) - UTAH - Infestations caused serious damage to English walnuts; damage less severe to black walnuts at Tooele, Tooele County. (Knowlton).

BLACK PECAN APHID (Melanocallis caryaefoliae) - ALABAMA - Extremely heavy on pecans at Irvington, Grand Bay and Semmes, Mobile County. (Seibels).

BROWN SOFT SCALE (Coccus hesperidum) - TEXAS - Generally heavy populations caused moderate to heavy damage to citrus in lower Rio Grande Valley. (Newton).

CHAFF SCALE (Parlatoria pergandii) - TEXAS - Spotted, light to moderate infestations on citrus in lower Rio Grande Valley. (Newton).

CALIFORNIA RED SCALE (Aonidiella aurantii) - TEXAS - Populations increased on citrus and caused considerable damage to groves locally in lower Rio Grande Valley. (Newton).

FLORIDA RED SCALE (Chrysomphalus aonidum) - TEXAS - Common in many lower Rio Grande Valley citrus groves. (Newton).

CITRUS THRIPS (Scirtothrips citri) - CALIFORNIA - Continues severe on citrus in southern citrus area. (Cal. Coop. Rpt.).

A SPIDER MITE (Oligonychus platani) - CALIFORNIA - Medium infestation on grape in Garden Grove, Orange County. (Cal. Coop. Rpt.).

A SCARAB (Cotinis texana) - CALIFORNIA - More prevalent on ripening fruit in Orange County than previous years. (Cal. Coop. Rpt.).

TRUCK CROP INSECTS

CORN EARWORM (Heliothis zea) - ALABAMA - Light infestations in okra in Blount County. (Buttram, Grimes). DELAWARE - Present in pepper pods in New Castle and Sussex Counties. (Burbutis, Mason).

HORNWORMS (Protoparce spp.) - DELAWARE - Larvae numerous to abundant with heavy feeding damage on peppers in New Castle County. (Burbutis, Mason). WISCONSIN - Few fifth instars remain; pupation nearly completed in southern area. (Wis. Ins. Sur.). SOUTH DAKOTA - Immatures serious pest in gardens in Brookings area, Brookings County. (Hanten).

CABBAGE LOOPER (Trichoplusia ni) - ARIZONA - Medium populations present on lettuce locally in Maricopa County. (Ariz. Coop. Sur.). DELAWARE - Present on beans and common to numerous on cabbage and peppers, with moderately heavy feeding injury, in New Castle and Kent Counties. (Burbutis, Mason).

IMPORTED CABBAGEWORM (Pieris rapae) - ALABAMA - Moderately heavy on cabbage and collards. (Seibels). DELAWARE - Larvae common on cabbage with moderately heavy feeding injury in central Kent County. (Burbutis, Mason).

BEET ARMYWORM (Spodoptera exigua) - ARIZONA - Present on lettuce locally in Maricopa County; 1-4 larvae per 10 plants. (Ariz. Coop. Sur.).

YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli) - MARYLAND - Moderately injured newly emerged spinach locally in Baltimore County. (U. Md., Ent. Dept.).

EUROPEAN CORN BORER (Ostrinia nubilalis) - DELAWARE - Larvae numerous in pepper pods and stems locally in central Kent County; present on beans in southwestern Sussex County. (Burbutis, Mason).

SQUASH VINE BORER (Melittia cucurbitae) - NEW MEXICO - Serious problem on roots and vines of squash in Rio Arriba County. (N. M. Coop. Rpt.).

PICKLEWORM (Diaphania nitidalis) - SOUTH CAROLINA - Damage high; all untreated cantaloups in Piedmont area heavily infested during past 3 weeks. (Nettles et al.).

GARDEN FLEAHOPPER (Halticus bracteatus) - DELAWARE - Adults and nymphs common to numerous on pumpkin squash and beans statewide. (Burbutis, Mason).

HARLEQUIN BUG (Murgantia histrionica) - ALABAMA - Very heavy on cabbage and collards in Mobile County. (Seibels).

POTATO APHID (Macrosiphum euphorbiae) - WISCONSIN - Infestations reported heaviest in years; parasites appeared. (Wis. Ins. Sur.).

GREEN PEACH APHID (Myzus persicae) - DELAWARE - Abundant on peppers in New Castle County; decreased in Sussex County. (Burbutis, Mason).

CUCUMBER BEETLES - DELAWARE - Adults of Diabrotica undecimpunctata howardi and Acalymma vittata damaging pumpkin squash in areas of State. (Burbutis, Mason).

A SOLDIER BEETLE (Chauliognathus pennsylvanicus) - ALABAMA - Heavy infestations on okra in Blount County. (Buttram, Grimes).

A BLISTER BEETLE - VIRGINIA - Undetermined species severely defoliating tomatoes in Charlotte County; present on other vegetables. (Tarpley, Barbour, Sept. 6).

SLUGS - WISCONSIN - Feeding heavily on tomatoes in Iowa County. (Wis. Ins. Sur.).

VINEGAR FLIES (Drosophila spp.) - CALIFORNIA - Heavy populations of pupae in soil in sugar beet fields on Sherman Island, Contra Costa County. (Cal. Coop. Rpt.).

A LEAF ROLLER (Clepsis peritana) - CALIFORNIA - Heavy populations occurred on strawberries in Oakdale, Stanislaus County. (Cal. Coop. Rpt.).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - DELAWARE - Larvae tunneled in strawberry crowns locally in eastern Sussex County; determined by H. W. Capps. (Burbutis, Mason).

WHITEFLIES - OREGON - Undetermined species abundant on strawberries locally in Marion County week of September 10. (Stephenson).

COTTON INSECTS

BOLL WEEVIL (Anthonomus grandis) - OKLAHOMA - Populations continue to range medium to heavy in southwest, central and southeast areas, especially on late cotton and cotton with abundant top growth. Light infestations noted in south central area. (Okla. Coop. Sur.). TEXAS - Continues most damaging pest in late cotton. Damaging populations reported as far nothwest as Kent County where it is normally not a problem. (Texas Coop. Rpt.). ALABAMA - Infestations remain under control in Tennessee Valley area where cotton not yet mature. Infestations increased rapidly in other areas where cotton is mature. (Buttram).

BOLLWORMS (Heliothis spp., et al.) - ARIZONA - Continue heavy in many fields statewide; larvae average 2-8 per 100 plants in untreated fields and caused considerable damage in many instances. Egg counts continue high. (Ariz. Coop. Sur.). OKLAHOMA - Light infestations (2 percent) noted in south central area; infestations ranged 8-12 percent in southeast. Some activity reported from north central, southwest, central and east central areas. (Okla. Coop. Sur.). ALABAMA - Infestations on increase throughout most of State. Many fields examined in De Kalb and Tuscaloosa Counties severely damaged; however, State average still remains under 10 percent. (Buttram).

CABBAGE LOOPER (Trichoplusia ni) - OKLAHOMA - Light in south central area; damage light in localized areas. Light to medium in southwest area. (Okla. Coop. Sur.).

COTTON LEAF PERFORATOR (Bucculatrix thurberiella) - ARIZONA - Medium to heavy populations in some areas of Yuma, Pinal and Maricopa Counties continue to require controls. (Ariz. Coop. Sur.).

PINK BOLLWORM (Pectinophora gossypiella) - ARIZONA - Heavy in one field in Graham County with 70 percent of bolls infested with as many as 3 larvae per boll. Infestations light in other fields. (Ariz. Coop. Sur.).

SALT-MARSH CATERPILLAR (Estigmene acrea) - ARIZONA - Remains light in cotton statewide with very little migration in any area. (Ariz. Coop. Sur.).

COTTON APHID (Aphis gossypii) - OKLAHOMA - Medium infestations noted in southwest area cotton fields. (Okla. Coop. Sur.). TEXAS - Light infestations caused some concern in Wilbarger County. (Lehmberg). ALABAMA - Populations observed in large numbers in many fields examined in Tennessee Valley area. (Buttram).

STINK BUGS (Euschistus impictiventris and Chlorochroa sayi) - ARIZONA - Medium infestations present in some cotton statewide. (Ariz. Coop. Sur.).

LYGUS BUGS (Lygus spp.) - ARIZONA - Infestations down, but damage continues to show in fields still squaring. (Ariz. Coop. Sur.).

SPIDER MITES - ALABAMA - Undetermined species caused numerous, isolated spots of damage in fields throughout Tennessee Valley. (Buttram).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

BARK BEETLES - ARKANSAS - Ips spp. and Dendroctonus terebrans activity increasing in small local spots of 1-10 trees over much of southern area. Peak activity will have passed by end of October as colder temperatures and slower brood development occur. Infested trees may be evident, however, into the winter. Some controls for D. terebrans occurring; salvage programs appear to be controlling Ips spp. infestations. (Ark. For. Pest Rpt., Sept.).

A PHYCITID (Dioryctria sp.) - OREGON - Larvae reported infesting 70 percent of Douglas-fir cones collected for seed in Josephine County. (Larson).

PINE TORTOISE SCALE (Toumeyella numismaticum) - PENNSYLVANIA - Heavy on lower branches of Scotch pine in Washington County; much sooty mold also present. (Simons).

WHITE-PINE SAWFLY (Neodiprion pinetum) - OHIO - Defoliating white pine at Reynoldsburg, Franklin County. (Walker).

SPRUCE SPIDER MITE (Oligonychus ununguis) - CALIFORNIA - Medium on Douglas-fir in Cutler, Humboldt County. (Cal. Coop. Rpt.).

ELM LEAF BEETLE (Galerucella xanthomelaena) - ARKANSAS - Defoliated Chinese elms over much of State this season; larvae of last generation now active; overwintering beetles will soon be evident in homes and other buildings. (Ark. For. Pest Rpt., Sept.). OKLAHOMA - Damage continues widespread throughout State. Adults becoming increasingly annoying in homes, seeking winter quarters. (Okla. Coop. Sur.). NEVADA - Moderate to heavy on elms at Beowawe, Eureka County. This is first record for county. (Menke). CALIFORNIA - Caused severe defoliation of elms in Herlong, Susanville and Janesville areas of Lassen County. In areas over State where no controls practiced or poor controls obtained, beetles seriously damaged elms. (Cal. Coop. Rpt.).

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - CALIFORNIA - Medium on elms in Marysville, Yuba County. Control application to elm trunks and limbs during 1960 in City of Sacramento apparently resulted in considerably reduced populations and problem in that area of Sacramento County, where epidemic populations of pest killed large elms during summer of 1960. (Cal. Coop. Rpt.). ARKANSAS - Dutch elm disease diagnosed in Greene, Poinsett, Mississippi and Randolph Counties, northeast area. (Ark. For. Pest Rpt., Sept.).

FALL WEBWORM (Hyphantria cunea) - ARKANSAS - Continued active on persimmon, pecan, walnut and hickory, but present generation not as heavy as expected. (Ark. For. Pest Rpt., Sept.).

WALNUT CATERPILLAR (Datana integerrima) - WISCONSIN - Nearly defoliated many walnut trees in southern area; injury to hickories less. (Wis. Ins. Sur.).

FORBES SCALE (Aspidiotus forbesi) - CALIFORNIA - Light infestation on Modesto ash trees in Maxwell, Colusa County, is apparently a new county record and a new host record. (Cal. Coop. Rpt.).

A GALL WASP (Neuroterus saltatorius) - OREGON - Caused considerable damage to oak in western portion of State during summer; several acres of trees defoliated in some cases. (Capizzi).

A PINE TIP MOTH (Rhyacionia frustrana bushnelli) - NEW MEXICO - Larvae and pupae collected from dooryard plantings of ponderosa pines at Portales, Roosevelt County. (N. M. Coop. Rpt.).

RED-HEADED PINE SAWFLY (Neodiprion lecontei) - ARKANSAS - Populations damaged plantations in spots; also found on ornamental pines in southern part of State. (Ark. For. Pest Rpt., Sept.).

RED-HUMPED CATERPILLAR (Schizura concinna) - CALIFORNIA - Infestations medium on hawthorn trees in Redwood City, San Mateo County, and walnut in Salyer, Trinity County; heavy on walnut in Concord, Contra Costa County. (Cal. Coop. Rpt.).

BEET ARMYWORM (Spodoptera exigua) - CALIFORNIA - Larval infestation heavy on plantings of Mesembryanthemum sp. in East Anaheim, Orange County. (Cal. Coop. Rpt.).

AZALEA CATERPILLAR (Datana major) - MARYLAND - Larvae causing noticeable injury to azalea and andromeda at Pittsville, Wicomico County. (U. Md., Ent. Dept.). ALABAMA - Completely defoliated several azalea bushes at Prichard, Mobile County. (Seibels).

IRIS BORER (*Macronoctua onusta*) - WISCONSIN - Adults appearing in flights of relative abundance in Madison area; appearance about one week earlier than in 1960. (Wis. Ins. Sur., Sept. 8).

HOLLYHOCK WEEVIL (*Apion longirostre*) - PENNSYLVANIA - Collected from seed of hollyhock in Cumberland County, September 11, by F. B. Negley. This is a new county record. (Negley).

AZALEA BARK SCALE (*Eriococcus azaleae*) - MARYLAND - Infesting azaleas at Jarrettsville, Harford County. (U. Md., Ent. Dept.).

WHITE PEACH SCALE (*Pseudaulacaspis pentagona*) - MARYLAND - Heavy on flowering cherry at College Park, Prince Georges County. (U. Md., Ent. Dept.).

APHIDS - CALIFORNIA - *Drepanaphis acerifoliae* adults medium on maples in Corona, Riverside County. (Cal. Coop. Rpt.). NEVADA - *Rhopalosiphum berberidis* ranges light to heavy on barberry in Reno, Washoe County. (Bechtel). MARYLAND - *Macrosiphum liriodendri* light to moderate on tulip-poplars in Prince Georges County. (U. Md., Ent. Dept.).

A LEAFHOPPER (*Caladonus coquilletti*) - CALIFORNIA - Heavy nymphal and adult populations present on planetrees in Marysville, Yuba County. (Cal. Coop. Rpt.).

CUBAN-LAUREL THRIPS (*Gynaikothrips ficorum*) - CALIFORNIA - Very troublesome on *Ficus retusa* (Indianlaurel fig) in Los Angeles-Long Beach area, Los Angeles County. (Ext. Serv.). Found for first time in Anaheim, Brea, San Clemente and Santa Ana in Orange County, infesting *F. retusa*. (Cal. Coop. Rpt.).

TREE CRICKETS - ALABAMA - Unspecified species continue heavy on ornamentals, especially camellias, in Mobile County. (Seibels).

TIP-DWARF MITE (*Eriophyes thujae*) - OHIO - Heavy on oriental arborvitae in central portion of State. (Walker).

INSECTS AFFECTING MAN AND ANIMALS

FACE FLY (*Musca autumnalis*) - ARKANSAS - Inspections at Washington County Fair yielded no infestations on cattle nor premises. (Boyer, Barnes). MARYLAND - Counts ranged 4-41 per head on 6 dairy herds in Howard County. (U. Md., Ent. Dept.). WISCONSIN - Heavy in Walworth and Taylor Counties. An estimated 5 percent of herds infected with pink eye; 50 percent of cows in some herds with mild to near-total blindness. (Wis. Ins. Sur.).

HOUSE FLY (*Musca domestica*) - RHODE ISLAND - Late summer populations caused annoyance in homes throughout State. (Hansen). WISCONSIN - Populations appeared minimal in survey of 77 barns during week. (Wis. Ins. Sur., Sept. 8). SOUTH DAKOTA - Continued a pest in eastern areas. (Hanten). OKLAHOMA - Populations reduced over previous week in Payne County. (Okla. Coop. Sur.).

HORN FLY (*Haematobia irritans*) - OKLAHOMA - Heavy populations; 600 per cow in southeast and up to 800 per cow in south central areas. Populations decreased in southwest and north central areas. (Okla. Coop. Sur.).

STABLE FLY (*Stomoxys calcitrans*) - WISCONSIN - Populations minimal in 77 barns surveyed during week. (Wis. Ins. Sur., Sept. 8). OKLAHOMA - Ranged 8-15 per cow in southeastern area. (Okla. Coop. Sur.).

SCREW-WORM (*Callitroga hominivorax*) - ARKANSAS - Present in Crawford County, the most northern find in the State this year. (Barnes). OKLAHOMA - Present and noted on cattle, horses and dogs in central third of State. (Okla. Coop. Sur.). TEXAS - Troublesome to ranchers throughout State. (Tex. Coop. Rpt.).

SECONDARY SCREW-WORM (Callitroga macellaria) - ALABAMA - Adults collected from calf in Tallapoosa County. (Buttram, Barwood).

MOSQUITOES - CALIFORNIA - Populations down in most city areas and general reduction statewide; highest populations in rice-growing area in Sacramento Valley. (Vector Cont.). ARIZONA - Heavy populations a problem around homes in several areas of State. (Ariz. Coop. Sur.). TEXAS - In Jefferson County, Culex spp., mostly salinarius, fewer than in July but numerous compared with May and June. Aedes sollicitans and A. taeniorhynchus continue present in moderate numbers; Psorophora confinnis declining; Anopheles crucians and A. quadrimaculatus populations remain high; Uranotaenia lowii and U. sapphirina increased in excessive numbers; Mansonia perturbans has reappeared, second brood this year. (Jefferson Co. Mosq. Cont. Comm., Aug. Rpt.). PENNSYLVANIA - Numerous complaints caused by presence of Culex pipiens pipiens throughout State. (Gesell).

TABANIDS (Tabanus spp.) - OKLAHOMA - Populations of 6 per animal, mainly T. abactor, T. sulcifrons and T. lineola, noted in southeastern area; materially reduced over previous week in north central and east central areas. (Okla. Coop. Sur.).

BLACK FLIES - UTAH - Abundant and annoying humans and cattle locally in Weber Canyon, Weber County. (Knowlton).

COMMON CATTLE GRUB (Hypoderma lineatum) - OKLAHOMA - Adult activity noted in Osage County. (Okla. Coop. Sur.).

VESPIDS - WISCONSIN - Yellow jackets and hornets (probably Vespula maculata) created nuisance in several areas of State; tourists and campers driven away in Douglas and Bayfield Counties and bulldozer operators had to cease road work. (Wis. Ins. Sur., Sept. 8). UTAH - Entered homes and schoolrooms at Salt Lake City. (Knowlton).

SADDLEBACK CATERPILLAR (Sibine stimulea) - PENNSYLVANIA - Numerous complaints of annoyance throughout State. (Pepper).

SYCAMORE LACE BUG (Corythucha ciliata) - RHODE ISLAND - Migrations from trees in Providence area caused concern; insects lodged in nostrils of children and required medical attention. (Mathewson).

LONE STAR TICK (Amblyomma americanum) - OKLAHOMA - Heavy larval populations on cows in southeastern area and heavy populations in timber areas of Bryan County. (Okla. Coop. Sur.).

BROWN DOG TICK (Rhipicephalus sanguineus) - MARYLAND - Infested homes locally in Baltimore and Queen Annes Counties. (U. Md., Ent. Dept.).

BLACK WIDOW SPIDER (Latrodectus mactans) - NEVADA - More abundant than usual in southern Washoe County. (Coop. Rpt.). UTAH - Caused concern around homes at Logan, Cache County, and at Layton, Davis County. Woman hospitalized due to bites at Provo, Utah County. (Knowlton). COLORADO - Numerous in Montezuma County. (Fitzsimmons).

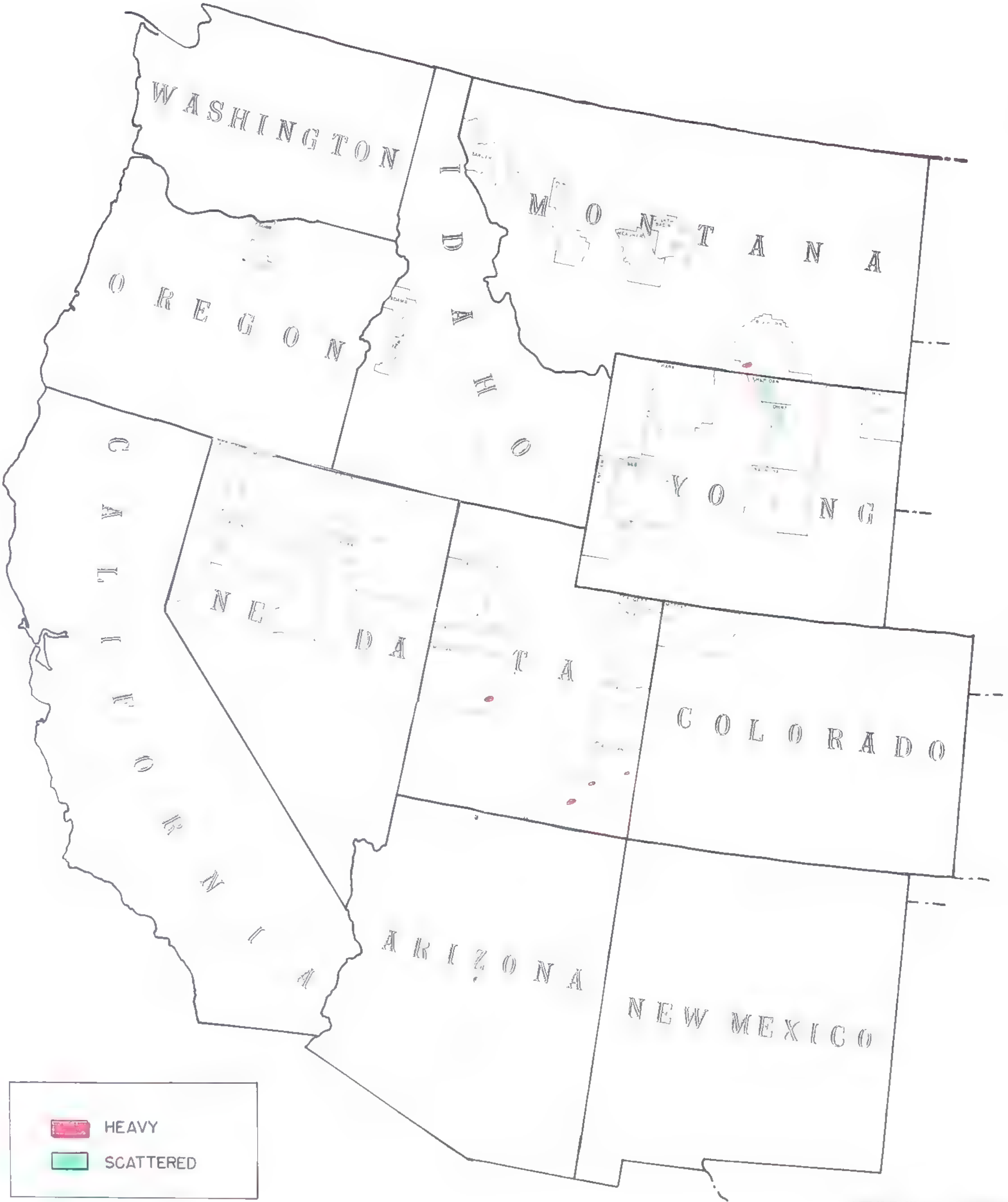
CHIGGERS - PENNSYLVANIA - Very abundant and annoying in Lancaster County. (Pepper).

STORED-PRODUCT INSECTS

KHAPRA BEETLE (Trogoderma granarium) - CALIFORNIA - Last two known infestations in State fumigated. Total known infestations 345 since beginning of program. No new infestations found in past three months. (Cal. Coop. Rpt.).

SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) - WYOMING - Infested stored grain and caused considerable damage in silo near Laramie, Albany County. (Haws). COLORADO - Infested stored food in home at Westminster, Adams County. (Hantsbarger).

MORMON CRICKET ADULT SURVEY — FALL 1961



UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
WESTERN REGION
OAKLAND CALIF
AUGUST 16, 1961

GPO 982910

BENEFICIAL INSECTS

LADY BEETLES - UTAH - Populations decreased on alfalfa in northern area. (Knowlton). WYOMING - *Hippodamia* sp. adults averaged 20 per 100 corn plants in Platte and Goshen Counties. (Fullerton). PENNSYLVANIA - Larvae and adults of *Hyperaspis signata* found feeding on *Toumeyella numismaticum* in Washington County. (Simons, Aug. 28).

NABIDS (*Nabis* spp.) - WYOMING - Adults averaged 10 per 100 corn plants in Platte and Goshen Counties. (Fullerton). UTAH - Populations decreased on alfalfa in northern area. (Knowlton).

A PTEROMALID PARASITE (*Halticoptera aenea*) - NEW MEXICO - Adults of this parasite of leaf miner flies abundant in alfalfa fields in Dexter area, Chaves County. (N. M. Coop. Rpt.)

A FLOWER BUG (*Orius tristicolor*) - UTAH - Populations decreased on alfalfa in northern area. (Knowlton).

MISCELLANEOUS INSECTS

IMPORTED FIRE ANT (*Solenopsis saevissima richteri*) - FLORIDA - Collected September 5 in Peace River Park east of Bartow, Polk County; first infestation in county outside of nursery sites. (Fla. Coop. Sur., PPC).

MARCH FLIES - ALABAMA - Extremely heavy populations of undetermined species in Mobile, Tuscaloosa and Greene Counties. (Seibels, Grimes, Buttram).

A MIDGE (*Chironomus crassicaudatus*) - MARYLAND - Very heavy infestation occurred in Sassafras River vicinity on August 15. Determined by W. W. Wirth. (U. Md., Ent. Dept.).

A FIELD CRICKET (*Gryllus* sp.) - SOUTH DAKOTA - Numerous and bothersome in homes in eastern area. (Hanten).

A NOCTUID (*Agrotis venerabilis*) - WISCONSIN - First appeared in blacklight trap collections on September 7 at Platteville. (Wis. Ins. Sur.).

BRONZED CUTWORM (*Nephelodes emmedonia*) - WISCONSIN - Adult collections increased in blacklight traps; first appeared in quantity August 29. (Wis.Ins.Sur.,Sept. 8).

COTTON LEAFWORM (*Alabama argillacea*) - WISCONSIN - First adult appeared in Madison light trap September 4. (Wis. Ins. Sur., Sept. 8).

A WEEVIL (*Gymnaetron teter*) - CALIFORNIA - Heavy larval populations at Saint Helena, Napa County, in mullein seeds. (Cal. Coop. Rpt.).

JAPANESE BEETLE (*Popillia japonica*) - PENNSYLVANIA - Adults continue to feed throughout State. (Pepper). NEBRASKA - First record of trapped adults in State; two adults trapped at Offutt Air Force Base, Omaha, Douglas County. (Bell). NEVADA - Traps operated throughout season at Stead Air Force Base, Reno International Airport and several nurseries in Reno yielded no collections. (Bechtel, Parker).

ASIATIC OAK WEEVIL (*Cyrtepistomus castaneus*) - VIRGINIA - Nuisance in homes in Charlotte and Culpeper Counties. (Tarpley, Barbour, Heltzel, Sept. 8).

CARPET BEETLES - CALIFORNIA - Several species numerous in homes throughout State. (Cal. Coop. Rpt.).

WHEEL BUG (*Arilus cristatus*) - PENNSYLVANIA - Very abundant in southwestern areas. (Udine).

NORTHERN FOWL MITE (Ornithonyssus sylviarum) - VIRGINIA - Infested apartment house in Pulaski, Pulaski County; determined by L. Cagle. (Meek, Sept. 6).

CORRECTIONS

CEIR 11(34):807 - ASH BORER (Podosesia syringae fraxini) - VIRGINIA, should read LILAC BORER (Podosesia syringae syringae) - VIRGINIA. Det. by H. W. Capps.

CEIR 11(37):880 - End of third line from top should read: ... and all plants of the Chenopodiaceae.

LIGHT TRAP COLLECTIONS

	Pseud.	Agrot.	Perid.	Prod.	Laphyg.	Anticarsia	Heliothis	
	unip.	ips.	saucia	ornith.	frug.	gemmatalis	zea	vires.
ARKANSAS								
Hope 9/7-13	16	5	3				73	
*Morrilton 8/31-9/6	12	15					40	
Kelso 9/7-13							15	
Fayetteville 9/7-13			12				81	
Little Rock 9/7-13	14	9	18				92	
CALIFORNIA								
Shafter Exp. Sta. 9/6-8,10-13	4	8	3				25	
COLORADO								
Two Buttes 9/8-15	8							
Rocky Ford 9/8-15	61	121					16	
Dolores 9/8-15	3	8	9				2	
New Liberty 9/8-15		13					10	
Greeley 9/8-15	27	6						
FLORIDA								
Quincy 9/6	1	6			1	2	10	
Gainesville 9/12-13	9	6		6	95	67	7	
ILLINOIS								
Urbana 9/8-14	21	61	68	52			121	
INDIANA (Counties)								
La Porte 9/5-7	36	22	8		2		9	
Lawrence 9/7	4	9	1		1		2	
Tippecanoe 9/8-12	7	10	7		2		2	
Vanderburgh 9/6-9	42	27	12		16		20	
MISSISSIPPI								
*Stoneville 9/8-14	382	107		620	108		955	59
NEBRASKA								
Scotts Bluff Exp. Sta. 9/3-9	11	6	1				1	
NEW JERSEY								
Seabrook 9/10	13			6			12	
Bridgeport 9/6,10	66			23			23	
Evesboro 9/6,10	130			111			52	
SOUTH CAROLINA								
Charleston 9/11-17	32	41		125	180	99	214	21
Clemson 9/9-15	26	28	4	133	35		44	1
TEXAS								
Waco 9/9-15	77	12	19	44			347	3
*Brownsville 8/26-9/1							2	1
WISCONSIN								
Platteville 9/3-9	10	5	14		31		15	
Mazomanie 9/5-11	26	30	17				5	
Middleton 9/8-13	15	62	15		19		10	
Madison 9/8-13	35	56	14		19		31	
Wayne 9/5-11	96						41	
Theresa 9/5-11	78						41	
Nenno 9/5-11	93						35	
Brandon 9/5-11	69						4	
Rosendale 9/5-11	6						7	
Ripon 9/5-11	3						3	
Princeton 9/5-11	8						7	
Winneconne 9/5-11							35	
Reedsville 9/5-11	20	5			4		5	
Green Bay 9/5-11	11	4					8	

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* Two traps - Morrilton, Stoneville; 5 traps - Brownsville.

STATE OF CALIFORNIA
DEPARTMENT OF AGRICULTURE
CHARLES PAUL, DIRECTOR
SACRAMENTO

April 14, 1961

COPY E-82-3

TO: All County Agricultural Commissioners

SUBJECT: Estimated Damage and Crop Loss Caused by Insect/Mite Pests - 1960

This report of estimated damage and dollar crop loss attributed to insect/mite pests is a summarization of special reports submitted by agricultural commissioners. Preparation of this information by each county involved a great deal of work; and yet, this data must of necessity be considered an estimate only, as all final crop report information is not available at the time of preparation.

Animal pests are included in the estimate, but are not complete as they represent only a few counties.

This year most county reports were complete, giving estimated crop value, percentage loss caused by insects and cost treatment. Considerable reinterpretation of the data presented was necessary for a comprehensive final report. There are some 250 different kinds of commercial crops grown in the State on 131,000 farms. The diversity of crops, geographical differences encountered within the State, and local cultural practices all contribute to the recording of a wide variety of insect/mite pests. Damage and loss figures from minor pests are not usually reported and are not included in the statistics. The totals for assessable yield loss and control costs do not always equal the estimated overall total due to the overlapping of treatments for several insects and other associated factors. In some instances one set of figures was not available and has been omitted. For a more accurate representation of statewide percent loss, the highest-lowest value is given rather than an average.

Forest insect estimates are included in cooperation with the U. S. Forest Service, Pacific Southwest Forest and Range Experiment Station.

Structural and commercial pest control is also represented. This section includes termite control and common household pest costs, along with the rodent control. Due to "termite clearances" incident to sale or transfer of property as required in many escrow instructions and by loaning agencies, termites have remained the number one structural pest as a rather high percentage of infestations occurs. Estimated dollar costs for individual structural pests is practically impossible as treatment for a combination of pests is of general practice in the industry. Information on structural pest control is furnished by the Pest Control Operators of California, Inc.

In cases where a damage-loss figure is assigned to a single species, it is so credited, whereas such assignments for broader groups comprising more than one species are reported compositely. Loss costs of 36 individual pests listed ran over a million dollars. The attached table presents the breakdown of assigned damage-loss dollar value.

Ronald M. Hawthorne
Economic Entomologist

Robert W. Harper, Chief
Bureau of Entomology

CROP LOSS ESTIMATE REPORT FOR CALIFORNIA - 1960

Insects	Assessable Yield Loss ($)	Control Cost ($)	% Loss of Crop Value	Estimated Over all Loss ($)
Mites (nonspecific)	21,832,576	8,902,872	13-.1	30,696,849
Citrus red mite (*Panonychus citri*)	2,834,887	2,654,042	5-.5	5,488,930
Citrus rust mite (*Phyllocoptruta oleivora*)	62,000	30,000	1	92,000
Clover mite (*Bryobia praetiosa*)	190,300	118,000	2-1	308,300
European red mite (*Panonychus ulmi*)	231,282	778,375	4-.25	1,009,657
Grape erineum mite (*Eriophyes vitis*)	50,000	-----	3	50,000
Pacific spider mite (*Tetranychus pacificus*)	64,000	89,000	5	153,000
Pear leaf blister mite (*Eriophyes pyri*)	3,246	125,550	.1	128,796
Tomato russet mite (*Aculus lycopersici*)	----	66,000	---	66,000
Two-spotted spider mite (*Tetranychus telarius*)	4,237,264	2,153,494	4-.5	6,495,758
Mites All - Total	29,505,555	14,917,333		44,489,290
European earwig (*Forficula auricularia*)	26,800	8,400	6-1	36,200
Grasshoppers	251,850	15,881	7-1	274,331
Field crickets (*Gryllus* spp.)	450,000	650,000	1	1,100,000
Thrips (nonspecific)	1,778,079	487,148	7-.007	2,265,224
Citrus thrips (*Scirtothrips citri*)	1,419,164	346,340	4.5-2	1,765,504
Onion thrips (*Thrips tabaci*)	15,000	40,000	2.4	55,000
Pear thrips (*Taeniothrips inconsequens*)	----	100,000	---	100,000
A thrips (*Frankliniella occidentalis*)	279,628	44,776	4-.013	324,404
Thrips All - Total	3,491,871	1,018,264		4,510,132
Leafhoppers (nonspecific)	715,483	191,796	1.7-.007	907,290
A grape leafhopper (*Erythroneura variabilis*)	4,840,268	4,133,022	6.5-.5	8,973,290
Leafhoppers All - Total	5,555,751	4,324,818		9,880,580
Pear psylla (*Psylla pyricola*)	166,866	413,480	9-.1	580,346
Aphids (nonspecific)	17,544,508	5,677,172	39-.045	29,003,071
Apple aphid (*Aphis pomi*)	14,410	121,000	5-.33	135,210
Cabbage aphid (*Brevicoryne brassicae*)	362,717	287,500	7-1	650,217
Green peach aphid (*Myzus persicae*)	724,029	298,343	8-.015	1,022,372
A lettuce root aphid (*Pemphigus bursarius*)	82,500	5,500	.025	88,000
Mealy plum aphid (*Hyalopterus pruni*)	1,000	1,000	1	2,000
Melon aphid (*Aphis gossypii*)	631,645	5,000	2	636,645
Pea aphid (*Macrosiphum pisi*)	130,000	----	20	132,440
Rosy apple aphid (*Anuraphis rosea*)	----	120,000	---	120,000

Aphids continued on page 900.

Insects	Assessable Yield Loss ($)	Control Cost ($)	% Loss of Crop Value	Estimated Over all Loss ($)
Spotted alfalfa aphid (Therioaphis maculata)	1,929,263	1,303,919	20-.016	3,230,182
Walnut aphid (Chromaphis juglandicola)	67,650	219,100	4-1	296,750
Woolly apple aphid (Eriosoma lanigerum)	37,000	37,000	1	72,000
Aphids All - Total	21,524,722	8,075,534		35,388,887
Mealybugs (nonspecific)	60,000	12,000	1	72,000
Citrus mealybug (Pseudococcus citri)	72,000	45,000	.15	117,000
Grape mealybug (Pseudococcus maritimus)	20,000	10,300	.3	30,300
Mealybugs All - Total	152,000	67,300		219,300
Scales (nonspecific)	480,530	827,662	5.5-1	1,308,192
Black scale (Saissetia oleae)	462,000	540,000	1-.5	1,002,860
Brown soft scale (Coccus hesperidum)	2,000	5,500	.5	6,800
California red scale (Aonidiella aurantii)	1,734,407	1,432,694	6.2-1.5	3,167,102
European fruit lecanium (Lecanium corni)	---	200,000	---	200,000
Greedy scale (Aspidiotus camelliae)	3,000	5,000	1	13,600
Olive scale (Parlatoria oleae)	519,417	485,220	3-.0023	1,004,637
San Jose scale (Aspidiotus perniciosus)	2,692,883	1,127,841	5-.5	3,820,775
Yellow scale (Aonidiella citrina)	487,082	605,607	1	1,092,689
Scales All - Total	6,381,319	5,229,524		11,616,655
Whiteflies	10,500	9,200	10	19,700
Plant bugs (Irbisia spp.)	----	----	.5	1,000
Stink bugs	1,094,297	502,275	5-.1	1,596,572
Lygus bugs (Lygus spp.)	12,901,861	8,287,045	10-.025	21,178,906
Alfalfa weevil (Hypera postica)	109,792	12,000	7.5-.4	124,672
Clover leaf weevil (Hypera punctata)	12,480	----	.5	12,480
A cucumber beetle (Diabrotica sp.)	33,100	10,060	2-1	43,160
Darkling beetles (Blapstinus sp. and Metoponium sp.)	13,000	5,000	1	18,000
Elm leaf beetle (Galerucella xanthomelaena)	----	2,100	---	2,100
Tobacco flea beetle (Epitrix hirtipennis)	24,472	30,000	.5	55,272
Fuller rose beetle (Pantomorus godmani)	220,000	4,000	2	224,000

Insects	Assessable Yield Loss ($)	Control Cost ($)	% Loss of Crop Value	Estimated Over all Loss ($)
Shot-hole borer (*Scolytus rugulosus*)	56,000	11,000	3.5-1	67,500
Wireworms	305,000	150,000	.75	445,000
Cabbage maggot (*Hylemya brassicae*)	19,000	12,000	1	31,000
A crane fly (*Tipula* sp.)	90,000	1,500	13	91,500
House fly (*Musca domestica*)	70,000	35,000	3	105,000
Onion maggot (*Hylemya antiqua*)	4,000	2,000	4	6,000
Leaf miners (nonspecific)	1,835,000	211,000	5-1	2,046,000
A pear leaf miner (*Lithocolletis* sp.)	6,800	3,200	3	10,000
A rice leaf miner (*Hydrellia griseola*)	173,080	73,525	1-.5	246,600
Leaf miners All - Total	2,014,880	287,725		2,302,600
Walnut husk fly (*Rhagoletis completa*)	95,000	155,000	2.5-1	250,000
Armyworm (*Pseudaletia unipuncta*)	6,650,867	2,008,658	8-.02	8,659,525
Artichoke plume moth (*Platyptilia carduidactyla*)	739,020	182,800	45-19	918,820
Azalea leaf miner (*Gracilaria azaleella*)	----	1,200	1.5	1,200
Beet armyworm (*Spodoptera exigua*)	343,000	130,000	1-.3	473,000
Cabbage looper (*Trichoplusia ni*)	5,828,718	3,807,912	10-.017	9,718,930
Codling moth (*Carpocapsa pomonella*)	746,340	2,024,336	10-.3	2,465,962
Corn earworm (*Heliothis zea*)	25,754,781	7,301,842	17.5-.025	34,255,436
Cotton leaf perforator (*Bucculatrix thurberiella*)	1,272,815	768,481	9-5.8	2,041,294
Cutworms	484,262	235,124	3-.1	720,106
Filbertworm (*Melissopus latiferreanus*)	15,000	----	5	15,000
Fruit-tree leaf roller (*Archips argyrospilus*)	250,000	400,000	6	650,000
Imported cabbageworm (*Pieris rapae*)	20,000	20,000	1.0	40,000
Navel orangeworm (*Paramyelois transitella*)	595,070	1,014,690	4-1	1,609,760

Insects	Assessable Yield Loss ($)	Control Cost ($)	% Loss of Crop Value	Estimated Over all Loss ($)
Orange tortrix (*Argyrotaenia citrana*)	180,035	365,500	1-.1	541,535
Peach twig borer (*Anarsia lineatella*)	2,177,090	2,754,062	6.4-.005	4,931,152
Potato tuberworm (*Gnorimoschema operculella*)	1,686,844	980,274	13-.0052	2,667,079
Red-humped caterpillar (*Schizura concinna*)	6,700	1,600	4-.25	8,300
Salt-marsh caterpillar (*Estigmene acrea*)	1,537,119	504,000	2-1	2,041,111
A tent caterpillar (*Malacosoma constrictum*)	----	15,000	---	15,000
Tomato hornworm (*Protoparce quinquemaculata*)	320	101	4	420
Western peach tree borer (*Sanninoidea exitiosa graefi*)	61,000	32,000	3.5-.05	93,000
Western yellow-striped armyworm (*Prodenia praefica*)	7,560,632	1,555,687	6-.023	9,116,319
Tadpole shrimp	36,700	52,000	1	89,600
Agricultural Pests Total	140,526,429	68,391,706		215,742,732
Animal Pests				
Bird lice (Menoponidae and Philopteridae)	1,100	500	4	1,600
Cattle lice (*Haematopinus* spp.)	121,500	37,080	.08	161,550
Cattle ticks (*Ixodes* spp. and *Dermacentor* spp.)	10,000	2,000	.4	12,000
Common cattle grub (*Hypoderma lineatum*)	169,500	35,650	.08	207,550
Horn fly (*Haematobia irritans*)	2,300	5,500	.17	7,800
Horse flies (*Tabanus* spp.)	1,200	2,400	.08	3,600
Northern fowl mite (*Ornithonyssus sylviarum*)	47,000	65,000	.2	112,000
Wool maggots (*Phaenicia sericata* and *Phormia regina*)	1,000	400	.9	1,400
Animal Pests - Total	353,600	148,530		507,500
Agricultural and Animal Pests - Total	140,880,029	69,540,236		216,250,232

Forest Pests	Assessable Yield Loss ($)	Control Cost ($)	% Loss of Crop Value	Estimated Over all Loss ($)
Western pine beetle (*Dendroctonus brevicomis*)				12,500,000
California five-spined ips (*Ips confusus*)				6,600,000
Mountain pine beetle (*Dendroctonus monticolae*)				6,080,000
Fir engraver (*Scolytus ventralis*)				5,300,000
Douglas-fir beetle (*Dendroctonus pseudotsugae*)				2,000,000
Jeffrey pine beetle (*Dendroctonus jeffreyi*)				1,500,000
California flatheaded borer (*Melanophila californica*)				400,000
Flatheaded fir borer (*Melanophila drummondi*)				300,000
A pine engraver (*Ips oregoni*)				100,000
Lodgepole needle miner (*Recurvaria milleri*)				20,000
Forest Pests - Total				34,800,000
Structural Pest Control				
Termites (subterranean and drywood), ants, cockroaches, spiders, carpet beetles, moths, silverfish, earwigs, crickets, storage pests, brown dog tick, bees, fleas, clover mite and rodents.				39,000,000
Structural Pest Control - Total				39,000,000
Grand Total - All Pests				290,050,232

LOSSES CAUSED BY SOME OF THE MOST IMPORTANT INSECTS IN FLORIDA - 1960

Prepared by Robert E. Woodruff et al.

1. A CHINCH BUG (*Blissus leucopterus insularis*) - Damage is figured for St. Augustine grass lawns and has not changed from the estimate used for 1958.

   Loss - $6,500,000   Insecticide costs - $17,000,000

2. FLORIDA RED SCALE (*Chrysomphalus aonidum*) and PURPLE SCALE (*Lepidosaphes beckii*) - These two species are combined because of difficulty in separating damage caused by each. This figure is based on a 2 percent loss in crop value due to these two scale insects. Florida red scale is the more important of the two.

   Loss - $5,300,000   Insecticide costs - $4,500,000

3. CITRUS RUST MITE (*Phyllocoptruta oleivora*) on citrus - This estimate is made on a single crop (citrus) damage and based on a 1.5 percent loss.

   Loss - $4,000,000   Insecticide costs - $3,750,000

4. A SERPENTINE LEAF MINER - A pest of several important Florida crops, including potatoes, tomatoes, cucumbers, watermelons, okra, celery and beans.

   Loss - $3,000,000   Insecticide costs - $2,000,000

5. SPIDER MITES on citrus - This is a composite group of pests, all very closely related and belonging to the family Tetranychidae. Nearly all of the one percent damage to citrus is caused by the following: CITRUS RED MITE (*Panonychus citri*), TEXAS CITRUS MITE (*Eutetranychus banksi*) and SIX-SPOTTED MITE (*Eotetranychus sexmaculatus*).

   Loss - $2,670,000   Insecticide costs - $1,500,000

6. CORN EARWORM (*Heliothis zea*) - The loss attributable to this insect is based on a damage estimate of 10 percent of the crop value. This high percentage is probably near the correct estimate since untreated corn ears were 40 to 100 percent infested.

   Loss - $1,312,500   Insecticide costs - $192,000

7. SOUTHERN ARMYWORM (*Prodenia eridania*) - Damaged tomatoes, potatoes, tobacco and various other crops. Some of the damage attributed to this species may apply to fall armyworm, however.

   Loss - $750,000

8. WIREWORMS - There are several species of Elateridae involved in the State, but SOUTHERN POTATO WIREWORM (*Conoderus falli*) seems to be the most abundant. About 50 percent of the damage done to potatoes can be attributed to wireworms.

   Loss - $500,000

9. FALL ARMYWORM (*Laphygma frugiperda*) - There are other species of armyworms which probably caused as much damage as this species. Some of the southern armyworm damage can also probably be attributed to this species.

   Loss - $350,000

10. CABBAGE LOOPER (Trichoplusia ni) - This species was the major pest of shade-grown tobacco in 1959, replacing TOBACCO BUDWORM (Heliothis virescens). Cabbage and tobacco were both damaged in 1960.

Loss - $210,000

MINNESOTA INSECT LOSSES - 1960

Compiled by Entomology Section,
Division of Plant Industry,
Minnesota Department of Agriculture

ESTIMATED DOLLAR LOSS DUE TO INSECTS ON MAJOR FIELD CROPS*

Crop	Insect	Dollar Loss
Oats, sweet and field corn	Armyworm (Pseudaletia unipuncta)	$ 37,614
Barley	Greenbug (Toxoptera graminum)	3,829
	Corn leaf aphid (Rhopalosiphum maidis)	12,027
	Thrips	5,920
	Other insects	57
Wheat	Greenbug	478
	Hessian fly (Phytophaga destructor)	900
Oats	Greenbug	40,884
	Other insects	8,076
Alfalfa	Pea aphid (Macrosiphum pisi)	5,577,760
	Plant bugs	436,050
Corn	European corn borer (Ostrinia nubilalis)	8,211,000
	Northern corn rootworm (Diabrotica longicornis)	4,457,711
	Cutworms	167,084
	Wireworms	304,504
Sugar beets	Beet webworm (Loxostege sticticalis)	51,900
Potato	All Insects	130,240
		$19,387,420

* The above figures do not include cost of insecticide treatment (chemical and application) which would further increase the dollar loss.

ESTIMATED ACREAGE TREATED FOR INSECT CONTROL

I Canning Crop:	Acreage treated
1. European corn borer (Ostrinia nubilalis)	
A. First generation	145
B. Second generation (ground & aerial treatments)	27,403
2. Corn earworm (Heliothis zea) (ground treatment)	2,352
3. Pea aphid (Macrosiphum pisi) (almost all aerial treatments)	14,981

	Acreage treated
II Forest Insects:	
	24,547
III Field Crop Insects:	
1. Grasshoppers (all crops)	9,700
2. European corn borer (field corn)	5,900
3. Cutworms (corn)	90,000
4. Aphids (barley, oats, wheat and rye)	51,135
5. Northern corn rootworm (*Diabrotica longicornis*)	336,150
6. Wireworms (soil treatment)	64,114
7. Beet webworm (*Loxostege sticticalis*) (sugar beets - almost all acreage treated)	59,325
8. Armyworm (*Pseudaletia unipuncta*) (small grains)	157
9. Miscellaneous insects	4,000
10. Alfalfa insects (alfalfa)	1,900
IV Mosquitoes:	
Metropolitan Mosquito Control District in Twin City Area	
Breeding site treatment	
Aerial (fixed wing)	121,227
(helicopter)	35,480
Ground	110,675
Adulticide treatment	16,474
Others (towns, villages, resorts, etc. - adult treatment)	
Aerial	3,205
Ground (estimation)	10,000
V Fruit Insects:	
Commercial apple orchards mainly in about 15 counties in southeast part of State, treated from 7 to 14 times each.	2,000
VI Potato Insects:	
	78,000

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WASHINGTON 25, D. C.

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